

SAMPLE MATH TEST QUESTIONS

1. The players on a basketball team scored 75 points in one game. During that game, they made twice as many field goals as they did free throws. Each field goal made was worth two points, and each free throw made was worth one point. How many field goals did the players on that team make during that game?

Equation: The number of free throws times the value of each free throw plus the number of field goals times the value of each field goal equals the total number of points accumulated.

$$\begin{aligned}\text{i.e. } x + 2(2x) &= 75 \\ 5x &= 75 \\ x &= 15\end{aligned}$$

x is the number of free throws made by each team, 15; therefore, $2x$, the number of field goals equals 30.

The correct answer is 30.

2. Eighty men and seventy women participated in a tennis tournament. Prizes for that tournament were awarded to the top twenty men participants and to the top 30% of the women participants. What percent of the people who participated in that tournament were awarded prizes?

Specification: This item is illustrative of a grid-response item.

A total of 150 people participated in the tennis tournament, 70 women and 80 men. Prizes are awarded to the top 20 men and to the top 21 women. The number of women who will win prizes is equal to 30% of the women participants. This means a total of 41 people out of the 150 participants will be awarded prizes. This converts to approximately 27% of the people participating, assuming that no one person can win more than 1 prize.

The correct answer is 27%.

3. Which of these choices could you write in the blank to produce a true statement?

"One gallon _____ 4 Liters."

- A. <
- B. >
- C. =
- D. None of the above

The correct answer is option A, <.

One gallon equals 4 quarts; 1 liter equals 1.056 liquid quarts, and 4 liters would equal 4.224 quarts. Therefore, four quarts is less than 4 liters, or one gallon is less than 4 liters.

4. Marcos bought 0.375 pound of mozzarella cheese. Did he buy enough mozzarella cheese to meet his pizza recipe's requirements for 8 ounces of cheese? If your answer is no, how much more does he need to satisfy the requirements of his recipe?

- A. Yes, he has enough.
- B. No, he needs one ounce.
- C. No, he needs two ounces.
- D. No, he needs three ounces.

The correct answer is option C (No, he needs two ounces.)

If Marcos purchased 0.375 pounds of cheese, he purchased $\frac{3}{8}$ of a pound of cheese. This converts to 6 ounces of cheese. If 8 ounces are needed for the recipe, Marco is short two ounces.

5. The rectangular floor of a room measures 9 feet by 12 feet. If carpet costs \$14 a square yard, find the minimum cost for enough of that carpet to cover the entire floor of that room? (Ignore waste, etc.)
- A. \$126
 - B. \$168
 - C. \$504
 - D. \$1512

The room has an area of 108 Square feet, which converts to 12 square yards. If carpeting costs \$14 a square yard, the cost to carpet the room is (12) (\$14) or \$168.

The correct answer is B.

6. By interviewing students, members of the Washington High School Sports Club determined the probability of a Washington Middle School (WMS) student buying ticket to their fund raiser, a donkey baseball game, is approximately one-fourth. Suppose there are about 850 students attending WMS and that the sports club can make a \$1.75 profit on each of the tickets they sell for \$3.50. Based on this data, predict about how much profit they might reasonable expect to make by selling tickets to that game to students attending WMS.
- A. \$3000
 - B. \$1500
 - C. \$750
 - D. \$375

The probability of a student at the middle school buying a ticket to the fund- raiser is $\frac{1}{4}$, and the profit on each ticket sold is \$1.75. If $\frac{1}{4}$ of the student body of the middle school buys a ticket, the amount of profit the sports club can reasonably expect from the 850 students at the middle school is $(\$1.75)(\frac{1}{4})(850)=\371.88 .

The best choice of the options is \$375, option D.

7. The average of five numbers is 16. If 14 is added to each of those numbers, what is the average of the resulting five numbers?
- A. 30
 - B. 14
 - C. 6
 - D. 5

If the average of 5 numbers is 16, the sum of those 5 numbers is 80. If 14 is added to each of the 5 numbers, this will increase the sum by 70. The new sum will be 150. The average of 5 numbers with a sum of 150 is 30.

The correct answer is A.

SAMPLE: WORKPLACE TEXT PASSAGES AND ITEMS, GRADE 11

Introductory Statement

Reading is necessary in everyday life. In addition to reading textbooks, tradebooks, magazines and newspapers, you read rules, regulations and procedures, applications, directions, handbooks, schedules, pamphlets, and other forms of text that help you to get things done.

This section of the test will present explanatory information about a person who must make a decision or solve a problem. The text that this person must work with in order to make the decision or solve the problem is also included.

Jane is Changing Jobs

Jane filled out a job application when she applied for a job in the computer department at the XYZ Company. Two positions are available, **Field Computer Technician** and **Telephone Computer Consultant**.

A **Field Computer Technician** visits customers and acts on his or her own to correct equipment failures. The applicant should be interested in a job that allows him/her to apply specialist training and knowledge of various computer models. This hands-on job requires manual dexterity and mechanical aptitude. Math skills and ability to read manuals are assets for this position.

A **Telephone Computer Consultant** must have strong verbal skills in order to answer callers' questions and help them with problems by presenting information from various computer manuals. A prior knowledge of computers is needed. The successful applicant for this position will be able to relate to a variety of problems and personalities. Experience in customer relations is preferred.

Job-Related Information about Jane

Jane lives at 36 South Lecato Avenue in Audubon, NJ 08106. She graduated from Audubon High School. Her courses of study included English I, II, III, IV; Computers I and II; Algebra I and II; Geometry; Trigonometry; American History I and II; General Science; French I and II; Foods I and II; and four years of Health and Physical Education. Jane was an associate editor for her school newspaper. She did word processing on a computer for the school paper.

Currently, she is working at Voyager, Inc. as a computer operator. Her responsibilities include equipment maintenance and troubleshooting. She has been at their Cherry Hill office since April of 1989. Jane worked part time at Jiffy Food Restaurant in Collingswood from September 1987 to August 1988. She also worked part time in the billing department at Altman's Store in the Cherry Hill Mall from October 1988 through February 1989.

Jane has never been arrested or convicted of a crime. She has never been in any branch of the armed services.

Excerpt from a Job Application Form

2. EDUCATION

- A. College Name & Location Dates From To Degree
- B. High School Name & Location Circle last year completed and give dates attended.
9 10 11 12
From: To:
- C. List courses you have taken that are relevant to this job.

3. MILITARY SERVICE Go to section 4 if this does not apply.

Branch Dates From To Duties Discharge

4. WORK EXPERIENCE (ENTER LAST JOB FIRST)

Company & Address Dates From To Duties Salary Reason for Leaving

5. CRIMINAL RECORD Go to section 6 if this does not apply.

Arrests Dates Nature of Crime Convicted

6. SPECIAL SKILLS

Check whether you have had Experience in any of the following:

☐ Accounting ☐ Computer Operator ☐ Sales
☐ Shorthand ☐ Cashier ☐ Advertising
☐ Word Processing ☐ Packing or Shipping ☐ Editorial

THE ABOVE FORM IS A PORTION OF A JOB APPLICATION FOR A COMPUTER TECHNICIAN AT THE XYZ INSURANCE COMPANY.

*(For ease of reading, A is the correct answer for each of these sample items, except for strategy and attitude questions.)

SYNTHESIZING
INFORMATION
TO MAKE AN
APPROPRIATE
DECISION

During her interview, Jane was told that technicians occasionally must deal with angry customers. Jane does not like confrontation. Why may she still be qualified for this position?

- A. Jane has had successful experience with customers at Jiffy and Voyager.
- B. Jane knows that she can find the answers in computer hardware manuals.
- C. Jane knows that she can refer the angry customer to her boss.
- D. In high school, Jane had Computers I and II and was a staff member of the school paper.

CLASSIFYING/
ORGANIZING
INFORMATION
TO REACH A
LOGICAL CON-
CLUSION OR
MAKE A JUDG-
MENT

Why is Jane better suited for the position of Field Computer Technician?

- A. She has technical support experience and a strong math background.
- B. She has experience with equipment maintenance and handling phone calls.
- C. She prefers working with people to solve technical problems.
- D. She did word processing on a computer for the high school newspaper.

For which of the two positions is Jane better suited? Explain.

(open-ended)

USING
PATTERNS OF
SEQUENCING
TO ACCOMPLISH
A GIVEN TASK

Which of the following represents the order in which section 4 should be completed.

- A. Voyager, Altman's, Jiffy
- B. Voyager, Jiffy, Altman's
- C. Jiffy, Altman's, Voyager
- D. School newspaper, Jiffy, Voyager, Altman's

EXTRAPOLATING
RELEVANT
INFORMATION
FROM WRITTEN
TEXT FOR A
SPECIFIC
PURPOSE

1. How should Jane answer Part 2C?
 - A. List math and computer classes
 - B. List all courses
 - C. List math, history and science classes
 - D. Leave it blank or write "NOT APPLICABLE"
2. How should Jane answer Part 5?
 - A. Leave it blank
 - B. Print that she has never been arrested
 - C. Cross out section.
 - D. Print "NOT APPLICABLE"
3. Which skills would Jane check in Part 6?
 - A. Word processing, computer operator, editorial
 - B. Accounting, word processing, shorthand
 - C. Computer operator, cashier, advertising
 - D. Sales, editorial, word processing

KNOWLEDGE
ABOUT
READING

The most effective way to decide which position Jane is better suited for could be to...

- A. read the job descriptions and Jane's background carefully
- B. scan the material for bold-faced headings
- C. make predictions based on the two job titles
- D. read the job application slowly and carefully

STUDENTS'
ATTITUDE
AND SELF-
APPRAISAL
AS READERS

Reading job applications and job descriptions is easy.

- A. strongly agree
- B. agree
- C. disagree
- D. strongly disagree

Reading to decide what Jane should do was difficult.

- A. strongly agree
- B. agree
- C. disagree
- D. strongly disagree

I gave my best effort to answering the test questions about Jane and her job search.

- A. strongly agree
- B. agree
- C. disagree
- D. strongly disagree